

**Paper Reference 31760H**  
**Pearson BTEC**  
**Level 3 Nationals**  
**Extended Certificate,**  
**Foundation Diploma, Diploma,**  
**Extended Diploma**

<b>Total Marks</b>
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**INFORMATION TECHNOLOGY**  
**UNIT 1: INFORMATION TECHNOLOGY**  
**SYSTEMS**

**Monday 21 January 2019 – Morning**  
**Time: 2 hours (plus your additional time allowance)**

**In the boxes below, write your name, centre number and learner registration number.**

<b>Surname</b>							
<b>Other names</b>							
<b>Centre Number</b>							
<b>Learner Registration Number</b>							

## **ITEMS INCLUDED WITH QUESTION PAPER**

- **A separate Data Booklet.**

## **INSTRUCTIONS**

- **Use BLACK ink, BLACK ball – point pen, BLACK felt tip or your usual method.**
- **Write your name, centre number and learner registration number on the front cover.**
- **Answer ALL questions.**
- **Answer the questions in the spaces provided in this Question Paper or in the Data Booklet – THERE MAY BE MORE SPACE THAN YOU NEED.**

## **INFORMATION**

- **Total mark for this paper is 90.**
- **The marks for EACH question are shown in brackets – USE THIS AS A GUIDE AS TO HOW MUCH TIME TO SPEND ON EACH QUESTION.**

## **ADVICE**

- **Read each question carefully before you start to answer it.**
- **Try to answer every question.**
- **Check your answers if you have time at the end.**

**Turn over**

**ANSWER ALL QUESTIONS.**

**WRITE YOUR ANSWERS IN THE SPACES PROVIDED.**

1. Joseph is a student in the final year of a three – year graphic arts course. At the beginning of his course he was given a second – hand laptop to use when completing college assignments.

The laptop is now five years old and Joseph is thinking of replacing it.

The operating system on the laptop is no longer supported by the manufacturer, which may cause security issues.

- (a) Explain TWO security issues that may arise from using an unsupported operating system.

(4 marks)

SECURITY ISSUE 1 \_\_\_\_\_

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**SECURITY ISSUE 2** \_\_\_\_\_

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**1. (b) is on the next page.**

**Turn over**

1. (b) Explain TWO issues, other than security, that may arise from using a five – year – old laptop. (4 marks)

ISSUE 1 \_\_\_\_\_

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ISSUE 2 \_\_\_\_\_

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1. (c) Joseph has decided to replace the laptop with a new **‘2 – in – 1 laptop’**. This will combine the functionality of a standard laptop and a tablet computer.

Joseph has decided to buy a computer with a pre – installed open source operating system, rather than one with a proprietary operating system.

- (i) Explain TWO benefits, OTHER than the initial cost, of using an open source operating system.

(4 marks)

**BENEFIT 1** \_\_\_\_\_

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**BENEFIT 2** \_\_\_\_\_

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**1. (c) (ii) is on the next page.**

1. (c) (ii) Explain TWO drawbacks of using an open source operating system.

(4 marks)

**DRAWBACK 1** \_\_\_\_\_

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**DRAWBACK 2** \_\_\_\_\_

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1. (d) is on the next page.

**Turn over**



1. (d) The '2 – in – 1 laptop' has a Graphical User Interface (GUI) similar to a tablet computer.

Discuss the factors that make a GUI suitable for use in mobile devices such as tablet computers.

(6 marks)

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Turn over

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**(TOTAL FOR QUESTION 1 = 22 MARKS)**

**Turn over**

- 2. Maria is a scientist working as part of a team studying the British weather.**

**An unmanned data logging system has been set up in the mountains of Scotland to monitor weather conditions such as temperature and rainfall.**

- (a) Explain what is meant by the term ‘data logging’.**

**(2 marks)**

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**Turn over**

2. (b) Explain TWO benefits of using a data logging system to monitor weather conditions in a remote area.

(4 marks)

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BENEFIT 2 \_\_\_\_\_

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**2. (c) is on the next page.**

2. (c) Describe how a data logging system would be used to monitor weather conditions.

(6 marks)

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**2. (d) is on the next page.**

**Turn over**

2. (d) Until recently Maria has collected the data by visiting the weather station.

Due to improvements in communication technology, Maria no longer needs to visit the weather station.

Explain TWO ways in which improvements in communication technology have removed the need to visit the weather station.

(4 marks)

WAY 1 \_\_\_\_\_

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**WAY 2**

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**2. (e) is on the next page.**

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**2. (e) When Maria receives the data from the weather station she needs to:**

- **analyse the data**
- **display the results in an appropriate format**
- **produce a report for the other scientists working in the team.**

**She has decided to use spreadsheet and word processing software to complete these tasks.**

**Discuss how the features of spreadsheet and word processing software would help Maria complete these tasks.**

**(6 marks)**

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**(TOTAL FOR QUESTION 2 = 22 MARKS)**

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**Turn over**

3. **Lakesuites Estate Agency sells properties in the Lake District. There is a head office with a small number of PCs linked to a network server. The network is backed up using a cloud storage system. Agents visit prospective sellers to gather information about properties. Agents use an online form to enter property details into a tablet computer. These forms are then submitted to head office using a virtual private network (VPN).**

**Sales packs are created for each property, these packs are available online for prospective buyers to view.**

**Head office staff contact sellers and buyers via email.**

**Details of all properties and personal details of sellers and buyers are stored on the agency's server at head office.**

**continued on the next page . . .**

3. (a) On the blank space provided for Question 3 (a) in the separate Data Booklet, draw a diagram to show the integration of systems used by Lakesuites Estate Agency.

The diagram should include:

- devices and systems that could be used
- devices to be connected and the connection type(s) used
- the flow of data through the system
- annotations indicating the information and data to be passed between systems, devices and users.

(6 marks)

3. (b) is on the next page.

3. (b) Agents gather information about properties from sellers and use tablet computers to enter property details into an online form.

Explain THREE factors that the agency should consider when setting up the online form.

(6 marks)

FACTOR 1 \_\_\_\_\_

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FACTOR 2 \_\_\_\_\_

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**FACTOR 3**

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3. (c) The online sales pack for each property includes:

- PDF documents giving details such as location, floor plans and energy ratings
- photographs
- a virtual tour video.

(i) Describe the use and implications of codecs when using video in digital format.

(4 marks)

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**3. (c) (ii) Discuss the factors that should be considered when making the sales packs available online.**

**(8 marks)**

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**(TOTAL FOR QUESTION 3 = 24 MARKS)**

4. **Sebourne Community Centre has a main office and meeting rooms used by members of the community for a wide variety of activities.**

**There is a Local Area Network (LAN) serving all areas of the centre. There is a mix of both PCs and laptop computers and they are all connected to the LAN using Ethernet cables.**

**The computers vary in age and specification, many having been donated by members over the years.**

**The centre has been given a grant to replace the computer system.**

**It is considering replacing the system with wireless enabled laptops.**

- (a) Analyse the implications of replacing the existing computers with wireless enabled laptops.**

**(10 marks)**

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**Turn over**

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4. (b) is on the next page.



4. (b) The centre has decided to go ahead with the replacement of the computer system and needs to dispose of the old system. The members are aware that there are moral, ethical and legal factors that should be considered.

Analyse the factors that should be considered when disposing of the old system.

(12 marks)

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**(TOTAL FOR QUESTION 4 = 22 MARKS)**

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**TOTAL FOR PAPER = 90 MARKS**

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